CLINICAL LECTURE ON THE SURGICAL TREATMENT OF PERFORATED GASTRIC ULCER.

DELIVERED AT THE MONTREAL GENERAL HOSPITAL ON THE 6TH OF NOVEMBER, 1895.

BY

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Dr. E. S. Lewis

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The subject of gastric ulcer is more fully treated in medical than in surgical text-books. It is with the complications and sequelæ of gastric ulcer that the surgeon is especially interested. I will not enter into a discussion of the etiology, course and treatment of ordinary gastric ulcer, but I may say that it is found in the stomach and in the duodenum as far down as the point of entrance of the common bile duct. It may be occasionally due to traumatism or corrosive poison, but the opinion seems to be pretty general that probably in the majority of cases it is due to a deficient blood supply to a small area, and that this spot deprived of its blood supply is digested or destroyed by the action of the gastric juice. As a rule when the condition is recognized and submitted to proper treatment the ulcer heals, and unless the process has been very extensive the resulting cicatrix causes no permanent disability. But unfortunately it occasionally happens that serious complications arise that jeopardize the life of the patient. For example, if the ulcerated surface is extensive the stomach may become so contracted and deformed during the healing process that impairment of function results. If the ulcer is situated at the cardiac or pyloric end stenosis may follow and operative interference be required to remove the obstruction and allow food to enter or leave the stomach.

Another alarming complication is hæmorrhage. This is seldom fatal, and only when it continues to recur to such an extent as to threaten life—as evidenced by collapse and hæmateinesis and melæna—would the question of operative interference arise. In two such cases, however, Küster, of Marbourg, has opened the anterior wall of the stomach, cauterized the ulcer and then performed a gastro enterostomy. Both cases recovered.

A third complication, which unless relieved by surgical measures, is fatal in about 95 p.c. of the cases is perforation of the wall of the

stomach or duodenum, permitting the contents to escape into the general peritoneal cavity, and there lighting up a fatal septic peritonitis.

Although gastric ulcer is more common on the posterior wall of the stomach than on the anterior, perforation occurs more frequently on the anterior wall. The reason for this is that ulcers on the posterior wall more frequently cause adhesions, especially to the pancreas, and thus a perforation into the general peritoneal cavity is avoided. Another reason why perforation is more common on the anterior wall is that the symptoms of a gastric ulcer in this situation are less marked —which means that the ulcer is less readily recognized, and therefore less frequently subjected to rest and proper dietetic treatment. It is very important that you should be able to diagnose a perforation of the stomach when it occurs. In fact the life of the patient depends upon an early diagnosis and prompt closure of the perforation. The symptoms are not many, but they are urgent and characteristic. They have been very clearly detailed to you in the report, which you have just heard read, of this case before you. When an anæmic young woman, with a history of indigestion, is suddenly seized with symptoms of acute peritonitis, you should at once wake up to the fact that you may be dealing with a case of perforating gastric ulcer. This young woman, aged 20, was admitted to the Montreal General Hospital about 6 p.m. on the 9th October, 1895. On October the 8th, about midnight, she had been suddenly seized with intense pain in the epigastric region. She could put the end of her finger on the spot where the severe pain first appeared, and where the greatest tenderness to pressure still remained. During the night the pain spread along the left costal margin and then over the whole abdomen, which had already, 18 hours after the onset of pain, become very much swollen. The pain was of a sharp shooting character, becoming more dull toward morning, but at once rendered acute by any movement of the body. She had vomited several times during the night. Her pulse was 118, of fair quality, rather high tension. Temperature 103° F. Respiration, thoracic, quick and shallow. She gave a history of having been treated in the out-door department of the hospital during the past summer for indigestion. She had suffered from flatulence and vomiting after meals, followed two or three hours later by pain in the epigastrium, which was relieved by taking food.

Dr. Byers, the House Surgeon who admitted her, at once suspected the condition present, and summoned the staff for a consultation When I saw her she was lying in bed with an anxious expression of countenance. Pulse, temperature and respiration as noted above. On making a physical examination the abdomen was found mode-

rately distended. On asking her where the pain was most severe she put her finger on a point about two inches below the ensiform cartilage and a little to the left of the median line. On palpation, the abdomen was everywhere tender, but moderate pressure could be borne over the centre in the umbilical region, over the hypogastrium on both sides, and over the situation of the appendix, but over the point where pain was first felt the slightest touch caused the patient to cry out. In perforative peritonitis there is always a point of maximum tenderness and that point is over the seat of perforation. In appendicitis it is over the appendix at the so-called McBurney's point, or if the appendix is turned up behind the colon it may be in the right loin. In perforating gastric ulcer it is over the stomach. Pain may be more generalized, but the point of maximum tenderness is always over the seat of perforation and is the most important and reliable guide by which to localize the lesion.

As far as I could judge about half the liver dulness had disappeared. The lower half of the normal area of liver dulness was tympanitic. The presence of a tympanitic note on percussion over the region of the liver is very suggestive of a perforation of some part of the alimentary canal and the escape of gas into the peritoneal cavity.

The urine was high coloured, sp. gr. 1030, acid reaction, no albumen, no sugar, urea grs. xiii. to the ounce.

The history and symptoms rendered the diagnosis of perforated gastric ulcer pretty certainly correct.

The prognosis was that if left alone the girl would certainly die in 24 to 48 hours of toxæmia from septic peritonitis. The indication clearly was to open the abdomen, close the hole in the stomach, and remove so far as possible all matters that had already escaped together with the serum or sero-pus already formed. And it was important that this should be done at once, before the infection and inflammation of the peritoneum had gone so far that a favourable result would be unattainable. Twenty-two hours had already elapsed since perforation had taken place. Fortunately the matters escaping from a hole in the stomach are not as virulent and irritating as those escaping from the intestine, and I think that this is the reason why peritonitis from an escape of stomach contents is less rapidly fatal than peritonitis caused by escape of intestinal contents, rather than, as Mr. Treves states in his Lettsomian lectures, to a difference in the character of the peritoneum itself in the upper part of the abdomen.

The girl was taken to the operating room at once and I made an incision in the median line between the ensiform cartilage and the umbilicus, as you see by this cicatrix. As soon as the peritoneal

cavity was opened, air and sero-purulent fluid escaped. The stomach was carefully packed around with sterilized gauze to prevent further escape into the peritoneal cavity and the opening in the anterior wall of the stomach readily discovered. It admitted my forefinger easily. The edges of the opening were, I should say, an inch or more thick. The greater part of the thick edge proved to be lymph. Now, one cannot stitch lymph. It will not hold a suture. The suture cuts out as soon as any tension is put on it. I had, therefore, to gently peel off the thick layer of lymph that I might get sound stomach wall to hold the sutures. On removing the lymph, I found that the ulcer had been evidently closed for a time by it, and that escape of stomach contents had occurred only when this reparative material had failed in its object, and that the ulcer was a very large one. When it was drawn out with its edges together the sew line measured 3½ inches. The edges were everted, and the mucous membrane had become adherent to the border of the rent throughout its entire extent. I closed the opening in the manner that you have seen done in wounds of the intestines, that is, first a continuous suture passing through all the coats of the stomach wall. This I believe to be an important part of the suturing. I then inverted the suture line and passed a continuous Lembert suture from one end of the rent to the other. If this is done neatly and carefully, it effects a closure absolutely water tight and air tight. I closed a typhoid perforation in this manner the other day, and, although the patient died about three hours after the closure, Dr. Johnston, at the post-mortem, tested the closure and found it quite impervious to water or air. After the closure was completed I wiped out all the fluids and lymph that could be reached, passed a glass tube surrounded by iodoform gauze down to the suture line, passed another small strip of the same down the calibre of the tube and closed the incision with two rows of sutures, catgut being used for the deep layer and silk-worm gut for the skin. I then made a small opening in the median line, midway between the umbilicus and the symphysis pubis, just large enough to admit a ½ inch glass drainage tube, which I passed down to the bottom of the pelvis. It was well that I did this, otherwise I might have lost my patient, for there escaped through this tube fully 20 ozs. of yellowish sero-purulent fluid. The tubes were removed on the fifth day. The patient has made an easy recovery.

Enemata of peptonized beef tea, with half an ounce of brandy, were given every four hours for seven days, and were well retained During the first three days nothing was allowed by the mouth except a teaspoonful of water every half hour to allay the thirst. On the

3rd day she was given an ounce of peptonized milk every two hours. This was gradually increased day by day.

On the fifteenth day she was given custard and a softly boiled egg. Then milk toast and arrow-root. At the end of the third week fish and chicken were allowed; and she now takes three pretty good meals daily.

This patient on the left was operated on by my colleague, Dr. Kirkpatrick, about a year ago. She made a perfect recovery and has remained in perfect health ever since. So far as I know these are the only cases of perforated gastric ulcer that have been operated upon in Montreal, and as you see they have both fortunately been successful.

In his Ingleby lecture Barling has reported 37 cases by various operators, with 13 recoveries. Several operations for perforating duodenal ulcer have been reported with, so far as I know, only one recovery.

Closure of a perforated ulcer on the posterior wall of the stomach is more difficult. Probably the better plan would be to approach it through an incision in the anterior wall of the stomach. In that case the Lembert suture would be applied first and the through and through suture afterwards. The opening in the anterior wall of the stomach being closed in the same way that I closed the opening caused by the perforating ulcer.